WHAT IS CLAIMED IS:

1. A method for anastomosing one hollow tissue structure to another hollow tissue structure, the method comprising steps of:

passing a first portion of at least one anastomosis device through an end of a first hollow tissue structure, the anastomosis device being in a first configuration;

positioning the end of the first hollow tissue structure and the first portion of the anastomosis device through an opening formed in a wall of a second hollow tissue structure;

securing the first and second hollow tissue structures together by changing the configuration of the anastomosis device to compress the end of the first hollow tissue structure against the wall of the second hollow tissue structure without passing the anastomosis device through the second hollow tissue structure, wherein the first hollow tissue structure is secured in communication with the opening in the second hollow tissue.

2. The method of claim 1, wherein the securing step is carried out by deforming the first portion of the anastomosis device against an inner surface of the wall of the second hollow tissue structure so that the end of the first hollow tissue structure and the wall of the second hollow tissue structure are compressed between the first portion and a second portion of the anastomosis device.

3. The method of claim 1, wherein a plurality of separate, unconnected anastomosis devices are used to secure the end of the first hollow tissue structure to the second hollow tissue structure.

4. The method of claim 3, wherein each anastomosis device is generally L-shaped when in the first configuration and is generally C-shaped after said securing step.

5. A method for anastomosing one hollow tissue structure to another hollow tissue structure, the method comprising steps of:

providing a first hollow tissue structure having a lumen and an end adapted to be anastomosed to a second hollow tissue structure;

forming an opening in the second hollow tissue structure;

providing a tissue securing element having first and second ends, at least the first end being configured to be passed through tissue, wherein the tissue securing element is configured in a first orientation and is comprised of a material capable of being deformed to a second orientation which is different from the first orientation;

passing the first end of the tissue securing element through the end of the first hollow tissue structure;

positioning the first end of the tissue securing element and the end of the first hollow tissue structure within the opening in the second hollow tissue structure; and

deforming the tissue securing element to the second orientation to compress the end of the first hollow tissue structure against the second hollow tissue structure without penetrating completely through the second hollow tissue structure.

6. The method of claim 5, wherein the first hollow tissue structure is a vascular conduit and the second hollow body structure is a patient's aorta.

7. The method of claim 5, wherein said passing step is carried out by everting the end of the first hollow tissue structure and passing the first end of the tissue securing element through the everted end from an exterior surface of the first hollow tissue structure toward an interior surface of the first hollow tissue structure.

8. The method of claim 5, wherein said deforming step is carried out so that the first end of the tissue securing element partially penetrates the second hollow tissue structure.

9. An anastomosis system comprising:

an applier comprising first and second relatively movable members;

a plurality of tissue securing members removably supported by at least one of first and second members, each tissue securing member having opposite ends one of which is configured to passed through a first hollow tissue structure, wherein each tissue securing member is in a first configuration;

wherein the first and second members of the applier are moved relative to each other to form each tissue securing member into a second configuration which is different from the first configuration and compresses the first and second hollow tissue structures.

10. The anastomosis system of claim 9, wherein the tissue securing members are comprised of a rigid material formed in said first configuration and are permanently deformed into said second configuration by moving the first and second members of the applier relative to each other.

11. The anastomosis system of claim 9, wherein the tissue securing members are comprised of superelastic material formed in said second configuration and are resiliently biased from said second configuration into said first configuration by moving the first and second members of the applier relative to each other.

12. The anastomosis system of claim 9, wherein the tissue securing members are comprised of a rigid material oriented in said second configuration and are repositioned so as to be oriented in said second configuration by moving the first and second members of the applier relative to each other

13. The anastomosis system of claim 9, further comprising a hub through which the tissue securing members are positioned.

add B1)

Add C1)